

Serial No.: 09/924,620

Attorney Docket No.: 2001P04227US01

**IN THE CLAIMS:**

This listing of the claims will replace all prior versions and listings of the claims in the application:

1. (Currently Amended) A system for rate adaptation in a wireless communication system, comprising:  
first circuitry in a first clock domain operable at a first clock frequency;  
second circuitry in a second clock domain operable at a second clock frequency;  
first and second jitter buffer pairs interfacing between said first circuitry and said second circuitry domain, said first jitter buffer pair comprising first and second jitter buffers, and said second jitter buffer pair comprising third and fourth jitter buffers;  
wherein said first or second jitter buffers alternately fill at said first clock frequency and empty at said second clock frequency, and said third or fourth jitter buffers alternately fill at said second clock frequency and empty at said first clock frequency, wherein alternation between said first and second jitter buffers and said third and fourth jitter buffers occurs simultaneously at said second clocking frequency, said first clocking frequency associated with a sample clock, said second clocking frequency associated with a frame clock.
2. (Original) A system in accordance with claim 1, said first circuitry comprising an audio input, said second circuitry comprising an encoder.
3. (Original) A system in accordance with claim 1, said first circuitry comprising an audio output, said second circuitry comprising a decoder.
4. (Original) A system in accordance with claim 2, said first clock frequency comprising a sample clock, said second clock frequency comprising a frame clock.
5. (Currently Amended) A telecommunication system including a rate adaptation system, comprising:  
an audio input;

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an audio output;

interface circuitry comprising first and second jitter buffers operably coupling said audio input to a voice encoder and third and fourth jitter buffers operably coupling said audio output to a voice decoder;

wherein said first or second jitter buffers alternately fill at a first clock frequency and empty at a second clock frequency, wherein alternation between said first and second jitter buffers occurs at said second clock frequency; and

wherein said third or fourth jitter buffers alternately fill at said second clock frequency and empty at said first clock frequency, wherein alternation between said third and fourth jitter buffers occurs simultaneously with said alternation between said first and second jitter buffers at said second clock frequency, said first clock frequency associated with a sample clock, said second clock frequency associated with a frame clock.

6. (Original) A system in accordance with claim 5, said interface circuitry comprising one or more digital signal processors.

7. (Original) A system in accordance with claim 6, said first clocking frequency comprising a PCM sample clock frequency.

8. (Original) A system in accordance with claim 7, said second clock frequency comprising a frame clock frequency.

9. (Original) A system in accordance with claim 8, wherein a frame comprises 160 samples.

10. (Original) A system in accordance with claim 9, wherein a size of said first, second, third, and fourth buffers is 165 samples.

11. Canceled

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12. (Currently Amended) A method for rate adjustment in a telecommunication system using first and second jitter buffers, said first and second jitter buffers adapted to receive a plurality of samples at a first clock rate and transmit a block of said samples at a second clock rate, and further including third and fourth jitter buffers, adapted to receive blocks of samples at said second clock rate and transmit a plurality of samples at said first clock rate, the method comprising:

switching between using said first or second jitter buffers at said second clock rate; and

switching between using said third or fourth jitter buffers simultaneously with said switching between using said first or second jitter buffers at said second clock rate, said first clock rate being associated with a sample clock, said second clock rate being associated with a frame clock.

13. Canceled

14. (Currently Amended) A method for rate adjustment in a telecommunication system, comprising:

receiving at first or second jitter buffers a plurality of samples at a first clock rate and transmitting a block of said samples at a second clock rate; and

switching between using said first or second jitter buffers at said second clock rate; and

receiving at third or fourth jitter buffers blocks of samples at said second clock rate and transmitting a plurality of samples at said first clock rate; and

switching between using said third or fourth jitter buffers simultaneously with said switching between using said first or second jitter buffers at said second clock rate, said first clock rate being a sample clock rate, said second clock rate being a frame clock rate.

15-18. Canceled

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19. (Currently Amended) A system for rate adaptation in a telecommunication system, comprising:
- first circuitry in a first clock domain operable at a first clock frequency;
  - second circuitry in a second clock domain operable at a second clock frequency;
  - first and second pairs of jitter buffers interfacing between said first circuitry and said second circuitry domain;
  - wherein ones of said pairs of first or second jitter buffers are swapped simultaneously according to a clock by which said ones of said pairs of first or second jitter buffers are filled or emptied, said clock comprising a frame clock rate.
20. (Original) A system in accordance with claim 19, wherein said system is in a GSM/TDMA multi-mode phone.